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24112	7590	04/19/2007		
COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			EXAMINER CAI, WAYNE HUU	
			ART UNIT	PAPER NUMBER
			2617	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/747,752

Applicant(s)

CHENG ET AL.

Examiner

Wayne Cai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-28, 30-34 and 52-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-28, 30-34 and 52-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 06, 2006 have been fully considered but they are not persuasive.

With regard to claim 1, the Applicant argues on page 14 that Walter (WO 00/70897) fails to teach or suggest a "common feed back criterion" that is "broadcast to a plurality of mobile terminals." Because page 11, lines 17-22 teaches a set-each-mobile-individually approach, not a common/broadcast approach. The Examiner disagrees. The Examiner further invites the Applicant to refer to page 12, line 23-25 of Walter, where the passage teaches or suggests **"the idle mobile station monitors broadcast or other control channel(s) to measure received signal strength if received signal strength is the parameter that was previously identified in the measurement control message."** Since Walter teaches or suggests the mobile station monitors broadcast as stated above; hence, it is clear to one skilled in the art that this is common/broadcast approach as required by the claim language.

The Applicant further states at the last paragraph on page 14 that "Applicant notes that while Walter base station may transmit to a plurality of mobile stations on a mobile-station-by-mobile-station basis, such are not a "broadcast" transmission as that term is understood by one skilled in the art. The Examiner respectfully notes that, one skilled in the art would broadly and reasonably understands the "broadcast" as transmit or to send out signals or simply communicate. Therefore, the term "broadcast" as

disclosed by Walter is in accordance with the plain meaning and understood by one skilled in the art.

Independent claims 21, 52, and 58 are substantially similar to independent claim 1; therefore, they are also rejected for the same reasons set forth above.

With further regard to claim 17, the Applicant argues that Seo does not teach or suggest "using different spreading factors (i.e., also pilot patterns) to differentiate between the different types of reports, instead, the type of report is based entirely on the timing position of the report." The Examiner respectfully disagrees. The Examiner further notes that it is clear to one skilled in the art that Seo teaches or suggests an apparatus and method for **reporting quality of downlink channel in W-CDMA communication systems supporting HSDPA** (see title and abstract of Seo). It is also important that the background of the invention discloses each slot of the DPCCH (Dedicated Physical Control Channel) includes: Pilot field, TFCI (Transport Format Combination Indicator) field, FBI (Feed Back Information) field, and TPC (Transmit Power Control) field. Specifically, the Pilot field transmits a pilot symbol, and the pilot symbol is used as a channel estimation signal when the UE modulates data to be transmitted to the Node B. **The TFCI field transmits TFCI bits, and the TFCI bits indicate TFC (Transport Format Combination) used by the currently transmitted data.** See paragraph 0024 of Seo.

Seo further teaches or suggests at paragraph 0149 that the CQI (Channel Quality Indicator) is provided to a controller, and K indicator bits 1930 are provided to the controller 1921. **The controller 1921 analyzes the K indicator bits 1930, and**

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distinguished whether the CQI information, downlink channel quality information reported by the UE, is CQ (Channel Quality) refreshment information, or CQ refinement information.

Based on the passages above, it is clear to one skilled in the art that there must be an indicator to distinguish between different types of reports. Hence, the claimed feature is obvious and/or well known in the art.

In general, the rejections are upheld, and presented once again below to serve as information purposes.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-14, 21-28, and 52-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Walter (WO 00/70897).

WO discloses all the steps and elements of independent claims 1, and 21, including a method, wireless communications mobile terminal, and a computer readable medium comprising a computer readable program embodied therein for a wireless communication mobile terminal, of reporting channel information in a wireless communication system, comprising: a mobile terminal (30) normally providing a basic channel report (page 4, lines 6 to 7 and page 11, lines 8-11), said basic channel report

at least partially characterizing a downlink channel (page 2, lines 25 to 28 and page 4, lines 1 to 5 and page 11, lines 8 to 11); said mobile terminal receiving at least one common feedback criterion broadcast to a plurality of mobile terminals (page 10, lines 3 to 17, page 11, line 18 to page 12, line 25); said mobile terminal determining if said mobile terminal satisfies a condition based on said at least on common feedback criterion (Figure 2 and the corresponding description) said mobile terminal selectively providing an enhanced channel report regarding said downlink channel based on said determining (Id. and Figures 3-4 and their corresponding description on pages 10 to 13); and wherein said enhanced channel report provides a more detailed view of said downlink channel than said basic channel report (Id.).

The rejections of 1, and 21 are hereby incorporated. WO discloses all the steps and elements of independent claims 52, and 58, including a method, a base station, and a computer readable medium comprising a computer readable program embodied therein for a wireless communication base station, of controlling channel information reporting in a wireless communication system, comprising: a base station (28) receiving a plurality of basic channel reports transmitted from a plurality of mobile terminals (page 11, lines 8-11 and page 10, lines 3 to 17), said basic channel reports at least partially characterizing one or more downlink channels from said base station (page 2, lines 25 to 28 and page 4, lines 1 to 5 and page 11, lines 8 to 11); determining, by said base station, at least one common feed back criterion (page 11, lines 17-18, Figure 3 and its corresponding description and Figure 5 and its corresponding description, disclose in the measurement control message including conditions); said at least on common

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feedback criterion helping to define a condition whose satisfaction controls which plurality of said plurality of mobile terminals subsequently transmit an enhanced channel report regarding one or more of said downlink channels to said base station (Id. and examples given in Figures 6 to 15); broadcast transmitting said at least one common feedback criterion from said base station to said plurality of mobile terminals (Id.); and wherein said enhanced channel report provides a more detailed view of said downlink channel than said basic channel report (Id.).

WO teaches all the steps/elements of claims 2 and 22, including wherein providing an enhanced channel report comprises providing an enhanced channel report that is a superset of said basic channel report. See 10, lines 24 to 26 and/or page 12, line 17 to page 13, line 10.

WO also discloses all the steps and elements of dependent claim 3, including wherein said at least one common feedback criterion comprises at least one threshold. See page 5, lines 11 to 21 and page 12, lines 12 to 16.

WO also discloses all the steps and elements of dependent claim 4, including wherein said at least one common feedback criterion comprises a channel quality indicator threshold. Id.

WO discloses all the steps of dependent claim 5, including wherein said at least one common feedback criterion comprises a throughput level threshold. See WO page 12, lines 12 to 16, traffic volume.

WO discloses all the steps of claim 6, including wherein said at least one common feedback criterion comprises at least one range. See WO page 14, lines 12 to 26.

WO also discloses all the steps and elements of dependent claims 7, and 23, including wherein said basic channel report comprises a channel quality indicator. See page 5, lines 11 to 21 and page 12, lines 12 to 16.

WO also discloses all the steps and elements of dependent claims 8 and 24, including wherein normally providing a basic channel report comprises normally providing a basic channel report on a periodic basis. See page 11, lines 5 to 16.

WO also discloses all the steps of dependent claim 9, including wherein said mobile terminal selectively providing an enhanced channel report based on said determining comprises said mobile terminal selectively providing, on a periodic basis, either said basic channel report or said enhanced channel report based on said determining. See Figure 4 and corresponding description, in view of the measurement control message, the mobile station would send whichever report was required.

WO also discloses all the steps and elements of dependent claims 10, and 25, including wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises further information on said first set of channel parameters. See Figures 3-5 and their corresponding descriptions, the mobile station will report on the parameters that are requested by the base station in the measurement control message in the time frame determined in said message. The base station will

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include the parameters and time frame desired in the measurement control message in order to increase the flexibility and optimize the operations of the system as a whole and to promptly and effectively respond to changing conditions within the system. See page 4, lines 20 to 27.

WO discloses all the steps and elements of claims 11, 12, 26, and 27, including wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to a second set (or a first set of channel parameters and information related to a second set) of one or more channel parameters of said downlink channel different from said first set of channel parameters. See *Id.*

WO also discloses all the steps of dependent claim 13, including wherein said basic channel report comprises a channel quality indicator; and wherein said mobile terminal selectively providing an enhanced channel report based on said determining comprises said mobile terminal selectively providing either said basic channel report or said enhanced channel report based on said determining. See *Id.*

WO disclose all the steps and elements of dependent claims 14 and 28, including providing an explicit indication of the presence of said enhanced channel report when said enhanced channel report is provided. This is inherent in view of, for example, Figure 4, step 58.

WO also discloses all the steps and elements of dependent claims 53 and 59, including wherein determining at least one common feedback criterion comprises determining at least one common feedback criterion based on at least a desired amount

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of enhanced channel reports. See pages 4 to 6, it is inherent that all of these conditions are predicated on the idea of limiting or having an ideal number of reports so that unnecessary signaling can be reduced and network optimization can be obtained.

WO discloses all the steps and elements of claims 54, and 60, including wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a data throughput rate. See *Id.* and see examples above and Figures 6 to 15.

WO also discloses all the steps and elements of dependent claims 55, and 61, including wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feed back criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator. See *Id.* and see examples above and Figures 6 to 15.

WO also discloses all the steps and elements of dependent claims 56 and 62, including wherein determining at least one common feedback criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a plurality of reported channel quality indicators. See *Id.* and see examples above and Figures 6 to 15.

WO discloses al the steps and elements of claims 57, and 63, including an amount of data queued at said base station for transmission to a plurality of said

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plurality of mobile terminals. See page 5, line 15, traffic volume, which inherently would include a consideration of data queued at the base station.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16-17, and 30-31 rejected under 35 U.S.C. 103(a) as being unpatentable over WO as applied to claims 1, 15, 21, and 29 above, and further in view of U.S. Patent Application Publication No. 200310123396 to Seo et al.

WO teaches all the steps and elements of claims 16-17 and 30-31, except employing a first spreading factor when transmitting said basic channel report and indicating the presence of said enhanced channel report by employing a different second spreading factor or pilot pattern when said enhance channel report is transmitted (than when said basic channel report is transmitted). However, Seo teaches in, for example, Figures 4 a way of off-setting via a different period the CQI information on the uplink HS-DPCCH channel and in Figure 9 the method of actually achieving this by using a mobile terminal to indicate the presence of specific CQI information--refreshment or refinement. See Figures 4 and 9 and the corresponding descriptions. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify WO by using the method of Seo to indicate the presence

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of the enhanced channel report by using two different spreading factors because the method of Seo indicates to the base station the type of CQI information being transmitted (in Seo, refinement or refreshment). See Figure 4.

6. Claims 18-20 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO.

WO teaches all the steps and elements of claims 18-20 and 32-34, except the various combinations of providing a basic channel report over a first logical channel and an enhanced channel report over said first logical channel, at least a second logical channel or where providing over the second logical channel includes selectively providing over said first logical channel and said second logical channel. However, one of ordinary skill in the art at the time the invention was made would have understood that the choice of logical channel for sending either of the basic channel report or the enhanced channel report would be based on resource allocations and volume traffic within the system at the time the given report was to be sent as well as the required bandwidth and necessary channel characteristics required for the reporting channel in view of the reports contents. Therefore, one of ordinary skill in the art at the time the invention was made would have known that various report schemes including various logical channel combinations would be used to provide the basic channel report and the enhanced channel report as claimed, depending on the system requirements at a given time and system loading.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (571) 272-7798. The examiner can normally be reached on Monday - Thursday from 7:00-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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